

(FILE 'USPAT' ENTERED AT 16:59:46 ON 25 FEB 1999)

L1 128 S (THIN FILM LIGHT SOURCE OR THIN FILM LIGHT)
L2 26 S (L1) (2A) (APERTURES OR OPENINGS OR LIGHT EMISSION OR LIG
HT
L3 34467 S (TRANSPARENT ELECTRODE OR TRANSPARENT SUBSTRATE OR ELECT
ROD
L4 933 S (OPAQUE ELECTRODE OR OPAQUE SUBSTRATE OR OPAQUE GLASS)
L5 3692 S (LIGHT BLOCKING OR BLOCKING LIGHT)
L6 8 S L2 AND L3
L7 1 S L2 AND L4
L8 0 S L2 AND L5
L9 287 S L3 AND L4
L10 9 S L5 AND L9
L11 1 S L1 AND L9

=> d 16 1-8 ab

US PAT NO: 5,627,364 [IMAGE AVAILABLE]

L6: 1 of 8

ABSTRACT:

A linear array **image** sensor with a light source, includes a first substrate made of a transparent plate, which has a first surface and a second surface, at least one **thin-film light emission** element disposed on the first surface of the first substrate and linearly elongated in a direction, a second substrate having two surfaces, and a plurality of solid-state **image** pickup elements disposed on one of the two surfaces of the second substrate and linearly aligned along the elongated direction of the **thin-film light emission** element. The first and second substrates are fixed to and integrated with each other by a transparent material so that light originated by the **thin-film light emission** element is emitted from the second surface of the first substrate and reflected by an **image** carrier to be detected, and that the reflected light is applied to the plurality of the solid-state **image** pickup elements through the first substrate.

US PAT NO: 5,343,216 [IMAGE AVAILABLE]

L6: 2 of 8

ABSTRACT:

An active matrix substrate comprising picture element electrodes disposed in a matrix on a substrate, each of which is composed of divided electrodes, and an electrically conductive film on which two of said divided electrodes adjacent to each other are superposed in a manner to sandwich an insulating film therebetween so as to form a connection. The connection is irradiated with laser beams from the outside of the display apparatus when one of the divided electrodes brings about a picture element defect, so that both the divided electrodes can be electrically connected to each other, thereby attaining a correction of the picture element defect. A display apparatus using the active matrix substrate is also provided.

US PAT NO: 5,229,626 [IMAGE AVAILABLE]

L6: 3 of 8

ABSTRACT:

A solid-state **image** converting device comprises a **transparent substrate**, a **transparent electrode** formed on the **transparent substrate**, an EL layer, formed on the **transparent electrode**, emitting light by the application of an electric field, a

dot-like low resistance layer formed on the EL layer, a photoconductive layer formed on the dot-like low resistance layer, and a back **electrode** formed on the photoconductive layer. A radiation **image** entered the **transparent substrate** or the back **electrode** is converted into a visible light **image** having high brightness on the back **electrode** or the **transparent substrate**.

US PAT NO: 5,151,807 [IMAGE AVAILABLE]

L6: 4 of 8

ABSTRACT:

An active matrix substrate comprising picture element electrodes disposed in a matrix on a substrate, each of which is composed of divided electrodes, and an electrically conductive film on which two of said divided electrodes adjacent to each other are superposed in a manner to sandwich an insulating film therebetween so as to form a connection. The connection is irradiated with laser beams from the outside of the display apparatus when one of the divided electrodes brings about a picture element defect, so that both the divided electrodes can be electrically connected to each other, thereby attaining a correction of the picture element defect. A display apparatus using the active matrix substrate is also provided.

US PAT NO: 5,138,416 [IMAGE AVAILABLE]

L6: 5 of 8

ABSTRACT:

A multilayer color photosensitive element made from group III-V alloy semiconductors. Charge is collected from the photosensitive element according to an amount of time it takes for red, green and blue light to travel through the layers. No filters or extra memory or patterning of the layered semiconductor during growth is required to create full color separations on a pixel by pixel basis.

US PAT NO: 5,105,238 [IMAGE AVAILABLE]

L6: 6 of 8

ABSTRACT:

A contact type **image** sensor is disclosed, wherein an illumination source having a **thin film light emitting** element is opposed to a sensor section having thin film photo sensitive elements, a **transparent substrate** being disposed therebetween. The **thin film light emitting** element is so-called an organic thin film EL element, which comprises an anode, a hole transport thin film, an electron transport organic fluorescent thin film, and a cathode. Since the organic thin film EL element can be driven at a low DC voltage, it decreases the fluctuation of the intensity of the illumination light, resulting in remarkably improving the reading accuracy of an **image**. In addition, the **thin film light emitting** element can be operated with a small amount of power. Moreover, it can be thinly structured.

US PAT NO: 5,057,244 [IMAGE AVAILABLE]

L6: 7 of 8

ABSTRACT:

A transparent, electrically conductive film suitable for use as a **transparent electrode** in various optical devices is provided. The film comprises a first element selected from a first group consisting of Sn, Pb, and In, at least one second element selected from a second group consisting of N, O, S, and H, and C.

US PAT NO: 4,695,859 [IMAGE AVAILABLE]

L6: 8 of 8

ABSTRACT:

A light emitting, thin film p-i-n diode characterized by aligned valence bands at the p-i interface and aligned conduction bands at the n-i interface and preferably including a layer of p-doped microcrystalline semiconductor alloy material. A photonic circuit fabricated as an

integrated, solid state structure which includes a multilayered **thin film light emitting** element formed of semiconductor alloy material and a multilayered thin film light detecting element formed of semiconductor alloy material. The photonic circuit is particularly adapted for use as an integrated large area imager adapted to generate electrical signals corresponding to the **image** on an **image-bearing** document.

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L9	287 S L3 AND L4
L10	9 S L5 AND L9
L11	1 S L1 AND L9

=> d 110 1-9 ab

US PAT NO: 5,781,333 [IMAGE AVAILABLE] L10: 1 of 9

ABSTRACT:
A piezoelectric actuatable array of light shutters is disclosed wherein each pixel aperture in the array is selectively opened and closed by way of an opaque piezoelectric shutter. Upon application of a voltage, each piezoelectric shutter extends laterally so as to close the corresponding pixel aperture and prevent light from passing therethrough. The piezoelectric shutters contract, opening the corresponding pixel aperture, upon removal of the above-threshold voltage.

US PAT NO: 5,641,791 [IMAGE AVAILABLE] L10: 2 of 9

ABSTRACT:
A reflective liquid crystal display device including a first substrate and a second substrate, a liquid crystal layer interposed between the first and second substrates, a polarizing plate, and a reflection layer; wherein the polarizing plate and the reflection layer are located on opposite sides of the liquid crystal layer. A surface of the reflection layer reflecting light has projections, and an occupation of an area of portions where a tilt angle of a tangent line drawn against a profile of the surface with the projections is less than 2.degree. in a total area of the surface is in a range of 20% to 60%.

US PAT NO: 5,101,099 [IMAGE AVAILABLE] L10: 3 of 9

ABSTRACT:
An **image** reading device in which light receiving elements formed on a first substrate are disposed in opposition to light emitting elements formed on a second substrate with a transparent layer being interposed therebetween. The transparent layer is made of a material whose reflectivity is smaller than that of the second substrate. In another embodiment, gas layers are provided between the transparent layer and the light emitting elements and the gas therein has an index of refraction less than the second substrate. Light transmitting windows provided in an **opaque electrode** of the light emitting elements have peripheral portions where no light is emitted.

US PAT NO: 5,062,690 [IMAGE AVAILABLE] L10: 4 of 9

ABSTRACT:

Each cell of a liquid crystal display comprises a pixel **electrode**, a primary field effect transistor for transferring electrical signals from one scan line and one data line to the pixel for conversion to an optical signal and at least one auxiliary field effect transistor for transferring signals from a scan line adjacent to the one scan line and from the one data line to the pixel when the primary field effect transistor is defective. The auxiliary FET gate **electrode** is electrically isolated from the adjacent scan line when the primary FET is not defective and may be connected to the adjacent scan line by activating a laser-fusible link if the primary FET is defective. Redundant scan line crossovers and redundant data line crossover are provided, with each redundant crossover having an open circuit that may be closed by a laser-fusible link to create a shunt around a selected scan and data line crossover location, if the scan line and data line are shorted together at that crossover location.

US PAT NO: 5,040,069 [IMAGE AVAILABLE]

L10: 5 of 9

ABSTRACT:

Described herein is a solid **image** pickup assembly for use in an electronic endoscope, including a substrate having a mask defining a masked area bearing wiring patterns and an **image** pickup area in the form of a light transmitting window, and a solid **image** pickup device. Also, the solid **image** pickup device is mounted on the substrate with the light receiving surface thereof in alignment with the transparent window by directly bump bonding electrodes of the **image** pickup device to the corresponding electrodes on the part of the substrate.

US PAT NO: 4,904,056 [IMAGE AVAILABLE]

L10: 6 of 9

ABSTRACT:

Light blocking spacer material is disposed so as to at least partially cover the data and/or gate lines in a variety of liquid crystal display (LCD) devices. The material prevents spurious visual information from being displayed as a result of high RMS supply voltages applied to the data lines, such voltages acting to switch liquid crystal material at inopportune times and to thus degrade the displayed **image**. The **light blocking** material also enhances the displayed **image** by acting as a spacer between the front and back LCD device panels to insure uniform cell spacing. **Light blocking** material is also employed at the same time to prevent light from reaching light sensitive thin film field effect transistors (FETs) which operate to switch each cell or to establish gray levels therein. The light otherwise has a tendency to discharge the LCD cell, also hampering device function.

US PAT NO: 4,471,371 [IMAGE AVAILABLE]

L10: 7 of 9

ABSTRACT:

A thin film **image** pickup element which consists of a photoelectric converter including a **transparent electrode**, a semiconductor layer, an **opaque electrode** and first insulator layer, and a switching element including first and second upper electrodes, another semiconductor layer, a gate **electrode** and a passivation film covered on the gate **electrode**. A two-dimensional thin film **image** pickup device consists of a plurality of such thin film **image** pickup elements by stereoscopically laminating a plurality of photoelectric converters and switching elements with the back surface used as wiring region. The device can read two-dimensional original documents without using a reducing optical system.

US PAT NO: 4,458,175 [IMAGE AVAILABLE]

L10: 8 of 9

ABSTRACT:

The enhancement of the intrinsic viewing screen brightness of the Mosaic Additive system of color reproduction, sufficient for saturated

reflectance color displays to be viewed comfortably by the ambient light, is taught. The enhancement comprises three means which may be employed severally or in combinations, to wit:

I. Photoluminescent compositions in the color elements.

II. Juxtaposed subtractive primaries with the additive primaries, as color elements.

III. Variable (optical) density interstices.

It is within the contemplation of the invention to effect an **image**, in cooperation with the viewing screen of this invention, by any suitable mechanical, electrical and/or chemical impression technique where it is desired to produce a Mosaic Additive color **image** for viewing with the unaided normal human eye by reflected ambient light. Such uses include: reflectance color--Television, Printing, Facsimile, Photography, and Xerography. The invention also specifies adaptations, of otherwise black and white embodiments of these reflectance imaging means, to color.

US PAT NO: 4,419,663 [IMAGE AVAILABLE]

L10: 9 of 9

ABSTRACT:

A display device comprises a composite body including a display structure of film-shape or plate-shape porous substance made of light transmissive or colored dielectric material and supported to expose at least one surface thereof to an open space and light transmissive liquid material impregnated in the porous substance, and means for applying a signal voltage to the composite body. By electroosmotic movement of the light transmissive liquid material in the porous substance in response to the signal voltage, liquid impregnation factor on at least one surface of the porous substance exposed to the open space is electrically controlled to control light reflection factor or light transmission factor of the composite body to an external light.

By forming a plurality of depressions of dot or line shape on the surface of the porous substance exposed to the open space, a high sensitivity control of external light is attained. By applying color ink on the surface of the porous substance or a surface of a support plate for supporting the porous substance, a color display device is attained.

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L9	287 S L3 AND L4
L10	9 S L5 AND L9
L11	1 S L1 AND L9
L12	1 S L2 AND 250/208.1/CCLST
L13	3 S L2 AND 358/CLAS
L14	0 S L2 AND 235/CLAS

=> d 112

1. 5,627,364, May 6, 1997, Linear array image sensor with
thin-film light emission element light source; Mitsufumi
 Kodama, et al., 250/208.1; 257/40, 443; 358/482 [IMAGE AVAILABLE]

=> d 113 1-3

1. 5,627,364, May 6, 1997, Linear array image sensor with
thin-film light emission element light source; Mitsufumi
 Kodama, et al., 250/208.1; 257/40, 443; 358/482 [IMAGE AVAILABLE]

2. 5,138,416, Aug. 11, 1992, Multi-color photosensitive element with
 heterojunctions; Leonard J. Brillson, 257/440; 250/226, 578.1; 257/184;
 358/513, 515 [IMAGE AVAILABLE]

3. 4,695,859, Sep. 22, 1987, **Thin film light emitting**
 diode, photonic circuit employing said diode imager employing said
 circuits; Subhendu Guha, et al., 257/64; 250/551; 257/55, 65, 76, 81, 84,
 458; 358/482 [IMAGE AVAILABLE]

=> d 113 1-3 ab

US PAT NO: 5,627,364 [IMAGE AVAILABLE]

L13: 1 of 3

ABSTRACT:

A linear array image sensor with a light source, includes a first substrate made of a transparent plate, which has a first surface and a second surface, at least one **thin-film light emission** element disposed on the first surface of the first substrate and linearly elongated in a direction, a second substrate having two surfaces, and a plurality of solid-state image pickup elements disposed on one of the two surfaces of the second substrate and linearly aligned along the elongated direction of the **thin-film light emission** element. The first and second substrates are fixed to and integrated with each other by a transparent material so that light originated by the **thin-film light emission** element is emitted from the second surface of the first substrate and reflected by an image carrier

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=> d 17

1. 4,695,853, Sep. 22, 1987, **Thin film light emitting**
diode, photonic circuit employing said diode imager employing said
circuits; Sukhendu Guha, et al., 257/64; 250/551; 257/55, 65, 76, 81, 84,
458; 358/482 [IMAGE AVAILABLE]

=> a 110 1-9

1. 5,781,333, Jul. 14, 1998, Piezoelectric light shutter; John
Lanzillotta, et al., 359/316, 290, 297 [IMAGE AVAILABLE]
2. 5,691,791, Nov. 25, 1997, Reflective liquid crystal display device
and reflector; Kozo Nakamura, et al., 349/113, 75, 117 [IMAGE AVAILABLE]
3. 5,101,099, Mar. 31, 1992, **Image** reading device with different
reflectivity coefficients in a transparent layer and a substrate; Masao
Funada, et al., 250/208.1; 358/482 [IMAGE AVAILABLE]
4. 5,062,890, Nov. 5, 1991, Liquid crystal display with redundant FETS
and redundant crossovers connected by laser-fusible links; Nathan R.
Whetten, 349/55; 257/59; 345/92; 349/41, 42 [IMAGE AVAILABLE]
5. 5,040,069, Aug. 13, 1991, Electronic endoscope with a mask bump
bonded to an **image** pick-up device; Seiji Matsumoto, et al., 348/76,
340 [IMAGE AVAILABLE]
6. 4,904,056, Feb. 27, 1990, **Light blocking** and cell spacing for
liquid crystal matrix displays; Donald E. Castleberry, 349/162, 42, 54,
110, 155 [IMAGE AVAILABLE]
7. 4,471,371, Sep. 11, 1984, Thin film **image** pickup element;
Toshihisa Hamano, 257/53; 250/208.1; 257/57, 294, 435 [IMAGE AVAILABLE]
8. 4,458,175, Jul. 3, 1984, Mosaic additive reflectance color display
screen; Robert R. Weekley, 313/472, 470; 348/739, 764, 770 [IMAGE
AVAILABLE]
9. 4,419,663, Dec. 6, 1983, Display device; Tadao Kohashi, 345/107;
52/171.3; 359/290 [IMAGE AVAILABLE]

=> d 111

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Concerning Claims 1, 10~13
Cited Reference 1

Concerning Claims 2, 4
Cited References 2 and 3

Concerning Claim 3

Cited References 1~4
Remarks

Reference to technology establishing light absorbent bodies for components which have the manuscript[?] irradiated section removed which is recorded in the following Cited Reference 4.

Concerning Claims 5~7, 14
Cited References 1~3 and 5
Remarks

Reference to technology establishing optical fibers which bend in a set direction by smoothing the light from the light source is recorded in the following Cited Reference 5.

Concerning Claims 8, 9
Cited References 1~3 and 6
Remarks

Reference to technology establishing a reflective layer which conducts light from the light source to specific light receiving elements is recorded in the following Cited Reference 6.

Cited References Chart

1. Patent Number Hei 3-166857
2. Patent Number Hei 3-93344
3. Patent Number Hei 5-14620
4. Patent Number Sho 63-102361
5. Patent Number Hei 1-276962
6. Patent Number Hei 3-9659

Record of Prior Art Reference Investigation Results

•Investigated Fields	IPC 6th Edition	H04N 1/024-1/207
	DB Title	

•Prior Art References Patent Number Hei 2-111154
 Patent Number Hei 8-111742

The record of this prior art reference investigation result is without a formation of rejection reasons.